

WAYS OUT OF THE CLIMATE AND SUSTAINABILITY CRISIS – WHAT IS OPINION, WHAT IS KNOWLEDGE, DO WE HAVE THE POWER TO CHANGE SOMETHING?

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The climate and sustainability crisis is currently the biggest problem for the survival of humanity. It cannot be solved by technological progress alone but requires a change of thinking at all levels. As scientists, we have a special responsibility and should take a leading role in communicating the need for urgent action to the public and decision makers. The first part of this talk will highlight the alarming signals, which are meanwhile also clearly visible in Europe. Our climate exhibits the typical features of a strongly interconnected complex system, such as strong nonlinearities, positive feedback, and tipping points, which are characterized by massive irreversible changes and cascade effects. Due to the well-known exponential growth effects in complex systems, there is not much time left before the first tipping points are reached. The second part of the talk addresses the question of what are the barriers towards change despite the striking evidence and what can be done. Based on examples from Kiel and our very active network *North European Network Nanotechnology* (NINa e.V., <https://www.nina-sh.de>) it will be shown that nanotechnology and new materials are key technologies to overcome the climate crisis. Emphasis, however, will be put on a more general view, ranging from the role of universities and the scientific community to our lifestyle. A sustainable lifestyle and a focus on what is important in life would not only improve our quality of life but also solve many other problems. This has particularly been demonstrated over the last years by Finland, which is the leading nation in terms of sustainability and continues to have the happiest people worldwide. As for the scientific community, we, a group of concerned researchers, recently founded the *International Alliance of Societies for a Sustainable Future* (<https://sfs-alliance.org>). Our vision is to establish an international scientific network as a tool to alert the general public worldwide to the sustainability crisis and to recommend measures for a socio-ecological transformation. The alliance is not restricted to natural sciences and technology but aims to go through all disciplines across borders and cultures.